

Sayegh, Mohamed

<120> A Gene Encoding a Multidrug Resistance Human P-Glycoprotein
Homologue on Chromosome 7p15-21 and Uses Thereof

<130> 81994/268611

<160> 19

<170> PatentIn version 3.0

 $\langle 210 \rangle$ 1

<211> 659

<212> PRT

<213> Homo sapiens

<400> 1

Met Leu Ala Glu Lys Gly Ala His Ala Glu Leu Met Ala Lys Arg Gly
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Leu Tyr Tyr Ser Leu Val Met Ser Gln Asp Ile Lys Lys Ala Asp Glu
20 25 30

Gln Met Glu Ser Met Thr Tyr Ser Thr Glu Arg Lys Thr Asn Ser Leu
35 40 45

Pro Leu His Ser Val Lys Ser Ile Lys Ser Asp Phe Ile Asp Lys Ala
50 55 60

Glu Glu Ser Thr Gln Ser Lys Glu Ile Ser Leu Pro Glu Val Ser Leu
65 70 75 80

Leu Lys Ile Leu Lys Leu Asn Lys Pro Glu Trp Pro Phe Val Val Leu
85 90 95

Gly Thr Leu Ala Ser Val Leu Asn Gly Thr Val His Pro Val Phe Ser
100 105 110

Ile Ile Phe Ala Lys Ile Ile Thr Met Phe Gly Asn Asn Asp Lys Thr
115 120 125

Thr Leu Lys His Asp Ala Glu Ile Tyr Ser Met Ile Phe Val Ile Leu
130 135 140

Gly Val Ile Cys Phe Val Ser Tyr Phe Met Gln Gly Leu Phe Tyr Gly
145 150 155 160

[illegible]

Arg	Ala	Gly	Glu	Ile	Leu	Thr	Met	Arg	Leu	Arg	His	Leu	Ala	Phe	Lys	
				165					170					175		
Ala	Met	Leu	Tyr	Gln	Asp	Ile	Ala	Trp	Phe	Asp	Glu	Lys	Glu	Asn	Ser	
				180					185					190		
Thr	Gly	Gly	Leu	Thr	Thr	Ile	Leu	Ala	Ile	Asp	Ile	Ala	Gln	Ile	Gln	
				195					200					205		
Gly	Ala	Thr	Gly	Ser	Arg	Ile	Gly	Val	Leu	Thr	Gln	Asn	Ala	Thr	Asn	
				210					215					220		
Met	Gly	Leu	Ser	Val	Ile	Ile	Ser	Phe	Ile	Tyr	Gly	Trp	Glu	Met	Thr	
				225					230					235		
Phe	Leu	Ile	Leu	Ser	Ile	Ala	Pro	Val	Leu	Ala	Val	Thr	Gly	Met	Ile	
				245					250					255		
Glu	Thr	Ala	Ala	Met	Thr	Gly	Phe	Ala	Asn	Lys	Asp	Lys	Gln	Glu	Leu	
				260					265					270		
Lys	His	Ala	Gly	Lys	Ile	Ala	Thr	Glu	Ala	Leu	Glu	Asn	Ile	Arg	Thr	
				275					280					285		
Ile	Val	Ser	Leu	Thr	Arg	Glu	Lys	Ala	Phe	Glu	Gln	Met	Tyr	Glu	Glu	
				290					295					300		
Met	Leu	Gln	Thr	Gln	His	Arg	Asn	Thr	Ser	Lys	Lys	Ala	Gln	Ile	Ile	
				305					310					315		
Gly	Ser	Cys	Tyr	Ala	Phe	Ser	His	Ala	Phe	Ile	Tyr	Phe	Ala	Tyr	Ala	
				325					330					335		
Ala	Gly	Phe	Arg	Phe	Gly	Ala	Tyr	Leu	Ile	Gln	Ala	Gly	Arg	Met	Thr	
				340					345					350		
Pro	Glu	Gly	Met	Phe	Ile	Val	Phe	Thr	Ala	Ile	Ala	Tyr	Gly	Ala	Met	
				355					360					365		
Ala	Ile	Gly	Lys	Thr	Leu	Val	Leu	Ala	Pro	Glu	Tyr	Ser	Lys	Ala	Lys	
				370					375					380		
Ser	Gly	Ala	Ala	His	Leu	Phe	Ala	Leu	Leu	Glu	Lys	Lys	Pro	Asn	Ile	
				385					390					395		
Asp	Ser	Arg	Ser	Gln	Glu	Gly	Lys	Lys	Pro	Asp	Thr	Cys	Glu	Gly	Asn	
				405					410					415		
Leu	Glu	Phe	Arg	Glu	Val	Ser	Phe	Phe	Tyr	Pro	Cys	Arg	Pro	Asp	Val	
				420					425					430		
Phe	Ile	Leu	Arg	Gly	Leu	Ser	Leu	Ser	Ile	Glu	Arg	Gly	Lys	Thr	Val	
				435					440					445		
Ala	Phe	Val	Gly	Ser	Ser	Gly	Cys	Gly	Lys	Ser	Thr	Ser	Val	Gln	Leu	
				450					455					460		
Leu	Gln	Arg	Leu	Tyr	Asp	Pro	Val	Gln	Gly	Gln	Val	Leu	Phe	Asp	Gly	
				465					470					475		
Val	Asp	Ala	Lys	Glu	Leu	Asn	Val	Gln	Trp	Leu	Arg	Ser	Gln	Ile	Ala	
				485					490					495		

Ile Val Pro Gln Glu Pro Val Leu Phe Asn Cys Ser Ile Ala Glu Asn
500 505 510

Ile Ala Tyr Gly Asp Asn Ser Arg Val Val Pro Leu Asp Glu Ile Lys
515 520 525

Glu Ala Ala Asn Ala Ala Asn Ile His Ser Phe Ile Glu Gly Leu Pro
530 535 540

Glu Lys Tyr Asn Thr Gln Val Gly Leu Lys Gly Ala Gln Leu Ser Gly
545 550 555 560

Gly Gln Lys Gln Arg Leu Ala Ile Ala Arg Ala Leu Leu Gln Lys Pro
565 570 575

Lys Ile Leu Leu Leu Asp Glu Ala Thr Ser Ala Leu Asp Asn Asp Ser
580 585 590

Glu Lys Val Val Gln His Ala Leu Asp Lys Ala Arg Thr Gly Arg Thr
595 600 605

Cys Leu Val Val Thr His Arg Leu Ser Ala Ile Gln Asn Ala Asp Leu
610 615 620

Ile Val Val Leu His Asn Gly Lys Ile Lys Glu Gln Gly Thr His Gln
625 630 635 640

Glu Leu Leu Arg Asn Arg Asp Ile Tyr Phe Lys Leu Val Asn Ala Gln
645 650 655

Ser Val Gln

<210> 2

<211> 812

<212> PRT

<213> Homo sapiens

<400> 2

Met Val Asp Glu Asn Asp Ile Arg Ala Leu Asn Val Arg His Tyr Arg
1 5 10 15

Asp His Ile Gly Val Val Ser Gln Glu Pro Val Leu Phe Gly Thr Thr
20 25 30

Ile Ser Asn Asn Ile Lys Tyr Gly Arg Asp Asp Val Thr Asp Glu Glu
35 40 45

Met Glu Arg Ala Ala Arg Glu Ala Asn Ala Tyr Asp Phe Ile Met Glu
50 55 60

Phe Pro Asn Lys Phe Asn Thr Leu Val Gly Glu Lys Gly Ala Gln Met
65 70 75 80

Ser Gly Gly Gln Lys Gln Arg Ile Ala Ile Ala Arg Ala Leu Val Arg
85 90 95

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

Asn Pro Lys Ile Leu Ile Leu Asp Glu Ala Thr Ser Ala Leu Asp Ser
 100 105 110
 Glu Ser Lys Ser Ala Val Gln Ala Ala Leu Glu Lys Ala Ser Lys Gly
 115 120 125
 Arg Thr Thr Ile Val Val Ala His Arg Leu Ser Thr Ile Arg Ser Ala
 130 135 140
 Asp Leu Ile Val Thr Leu Lys Asp Gly Met Leu Ala Glu Lys Gly Ala
 145 150 155 160
 His Ala Glu Leu Met Ala Lys Arg Gly Leu Tyr Tyr Ser Leu Val Met
 165 170 175
 Ser Gln Asp Ile Lys Lys Ala Asp Glu Gln Met Glu Ser Met Thr Tyr
 180 185 190
 Ser Thr Glu Arg Lys Thr Asn Ser Leu Pro Leu His Ser Val Lys Ser
 195 200 205
 Ile Lys Ser Asp Phe Ile Asp Lys Ala Glu Glu Ser Thr Gln Ser Lys
 210 215 220
 Glu Ile Ser Leu Pro Glu Val Ser Leu Leu Lys Ile Leu Lys Leu Asn
 225 230 235 240
 Lys Pro Glu Trp Pro Phe Val Val Leu Gly Thr Leu Ala Ser Val Leu
 245 250 255
 Asn Gly Thr Val His Pro Val Phe Ser Ile Ile Phe Ala Lys Ile Ile
 260 265 270
 Thr Met Phe Gly Asn Asn Asp Lys Thr Thr Leu Lys His Asp Ala Glu
 275 280 285
 Ile Tyr Ser Met Ile Phe Val Ile Leu Gly Val Ile Cys Phe Val Ser
 290 295 300
 Tyr Phe Met Gln Gly Leu Phe Tyr Gly Arg Ala Gly Glu Ile Leu Thr
 305 310 315 320
 Met Arg Leu Arg His Leu Ala Phe Lys Ala Met Leu Tyr Gln Asp Ile
 325 330 335
 Ala Trp Phe Asp Glu Lys Glu Asn Ser Thr Gly Gly Leu Thr Thr Ile
 340 345 350
 Leu Ala Ile Asp Ile Ala Gln Ile Gln Gly Ala Thr Gly Ser Arg Ile
 355 360 365
 Gly Val Leu Thr Gln Asn Ala Thr Asn Met Gly Leu Ser Val Ile Ile
 370 375 380
 Ser Phe Ile Tyr Gly Trp Glu Met Thr Phe Leu Ile Leu Ser Ile Ala
 385 390 395 400
 Pro Val Leu Ala Val Thr Gly Met Ile Glu Thr Ala Ala Met Thr Gly
 405 410 415
 Phe Ala Asn Lys Asp Lys Gln Glu Leu Lys His Ala Gly Lys Ile Ala
 420 425 430

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Thr Glu Ala Leu Glu Asn Ile Arg Thr Ile Val Ser Leu Thr Arg Glu
 435 440 445
 Lys Ala Phe Glu Gln Met Tyr Glu Glu Met Leu Gln Thr Gln His Arg
 450 455 460
 Asn Thr Ser Lys Lys Ala Gln Ile Ile Gly Ser Cys Tyr Ala Phe Ser
 465 470 475 480
 His Ala Phe Ile Tyr Phe Ala Tyr Ala Ala Gly Phe Arg Phe Gly Ala
 485 490 495
 Tyr Leu Ile Gln Ala Gly Arg Met Thr Pro Glu Gly Met Phe Ile Val
 500 505 510
 Phe Thr Ala Ile Ala Tyr Gly Ala Met Ala Ile Gly Lys Thr Leu Val
 515 520 525
 Leu Ala Pro Glu Tyr Ser Lys Ala Lys Ser Gly Ala Ala His Leu Phe
 530 535 540
 Ala Leu Leu Glu Lys Lys Pro Asn Ile Asp Ser Arg Ser Gln Glu Gly
 545 550 555 560
 Lys Lys Pro Asp Thr Cys Glu Gly Asn Leu Glu Phe Arg Glu Val Ser
 565 570 575
 Phe Phe Tyr Pro Cys Arg Pro Asp Val Phe Ile Leu Arg Gly Leu Ser
 580 585 590
 Leu Ser Ile Glu Arg Gly Lys Thr Val Ala Phe Val Gly Ser Ser Gly
 595 600 605
 Cys Gly Lys Ser Thr Ser Val Gln Leu Leu Gln Arg Leu Tyr Asp Pro
 610 615 620
 Val Gln Gly Gln Val Leu Phe Asp Gly Val Asp Ala Lys Glu Leu Asn
 625 630 635 640
 Val Gln Trp Leu Arg Ser Gln Ile Ala Ile Val Pro Gln Glu Pro Val
 645 650 655
 Leu Phe Asn Cys Ser Ile Ala Glu Asn Ile Ala Tyr Gly Asp Asn Ser
 660 665 670
 Arg Val Val Pro Leu Asp Glu Ile Lys Glu Ala Ala Asn Ala Ala Asn
 675 680 685
 Ile His Ser Phe Ile Glu Gly Leu Pro Glu Lys Tyr Asn Thr Gln Val
 690 695 700
 Gly Leu Lys Gly Ala Gln Leu Ser Gly Gly Gln Lys Gln Arg Leu Ala
 705 710 715 720
 Ile Ala Arg Ala Leu Leu Gln Lys Pro Lys Ile Leu Leu Leu Asp Glu
 725 730 735
 Ala Thr Ser Ala Leu Asp Asn Asp Ser Glu Lys Val Val Gln His Ala
 740 745 750
 Leu Asp Lys Ala Arg Thr Gly Arg Thr Cys Leu Val Val Thr His Arg
 755 760 765

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Leu Ser Ala Ile Gln Asn Ala Asp Leu Ile Val Val Leu His Asn Gly
770 775 780

Lys Ile Lys Glu Gln Gly Thr His Gln Glu Leu Leu Arg Asn Arg Asp
785 790 795 800

Ile Tyr Phe Lys Leu Val Asn Ala Gln Ser Val Gln
805 810

<210> 3

<211> 131

<212> PRT

<213> Homo sapiens

<400> 3

Met Val Asp Glu Asn Asp Ile Arg Ala Leu Asn Val Arg His Tyr Arg
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Asp His Ile Gly Val Val Ser Gln Glu Pro Val Leu Phe Gly Thr Thr
20 25 30

Ile Ser Asn Asn Ile Lys Tyr Gly Arg Asp Asp Val Thr Asp Glu Glu
35 40 45

Met Glu Arg Ala Ala Arg Glu Ala Asn Ala Tyr Asp Phe Ile Met Glu
50 55 60

Phe Pro Asn Lys Phe Asn Thr Leu Val Gly Glu Lys Gly Ala Gln Met
65 70 75 80

Ser Gly Gly Gln Lys Gln Arg Ile Ala Ile Ala Arg Ala Leu Val Arg
85 90 95

Asn Pro Lys Ile Leu Ile Leu Asp Glu Ala Thr Ser Ala Leu Asp Ser
100 105 110

Glu Ser Lys Ser Ala Val Gln Ala Ala Leu Glu Lys Asp Thr Pro Arg
115 120 125

Tyr Ser Phe
130

<210> 4

<211> 1058

<212> PRT

<213> Homo sapiens

<220>

<221> Note

<222> (66)..(66)

115 120 125 130 135 140 145 150 155 160 165 170 175 180 185 190 195 200 205 210 215 220 225 230 235 240 245 250 255 260 265 270 275 280 285 290 295 300 305 310 315 320 325 330 335 340 345 350 355 360 365 370 375 380 385 390 395 400 405 410 415 420 425 430 435 440 445 450 455 460 465 470 475 480 485 490 495 500 505 510 515 520 525 530 535 540 545 550 555 560 565 570 575 580 585 590 595 600 605 610 615 620 625 630 635 640 645 650 655 660 665 670 675 680 685 690 695 700 705 710 715 720 725 730 735 740 745 750 755 760 765 770 775 780 785 790 795 800 805 810 815 820 825 830 835 840 845 850 855 860 865 870 875 880 885 890 895 900 905 910 915 920 925 930 935 940 945 950 955 960 965 970 975 980 985 990 995

<400> 4

Met 1	Val	Ile	Ser	Leu 5	Thr	Ser	Lys	Glu	Leu 10	Ser	Ala	Tyr	Ser	Lys 15	Ala
Gly	Ala	Val	Ala 20	Glu	Glu	Val	Leu	Ser 25	Ser	Ile	Arg	Thr	Val 30	Ile	Ala
Phe	Arg	Ala 35	Gln	Glu	Lys	Glu	Leu 40	Gln	Arg	Ser	Phe	Leu 45	Leu	Asn	Ile
Thr	Arg 50	Tyr	Ala	Trp	Phe 55	Tyr	Phe	Pro	Gln	Trp	Leu 60	Leu	Ser	Cys	Val
Leu 65	Xaa	Phe	Val	Arg 70	Tyr	Thr	Gln	Asn	Leu	Lys 75	Asp	Ala	Lys	Asp	Phe 80
Gly	Ile	Lys	Arg 85	Thr	Ile	Ala	Ser	Lys 90	Val	Ser	Leu	Gly	Ala 95	Val	Tyr
Phe	Phe	Met	Asn 100	Gly	Thr	Tyr	Gly	Leu 105	Ala	Phe	Trp	Tyr	Gly 110	Thr	Ser
Leu	Ile	Leu 115	Asn	Gly	Glu	Pro	Gly 120	Tyr	Thr	Ile	Gly	Thr 125	Val	Leu	Ala
Val	Phe 130	Phe	Ser	Val	Ile	His 135	Ser	Ser	Tyr	Cys	Ile 140	Gly	Ala	Ala	Val
Pro 145	His	Phe	Glu	Thr 150	Phe	Ala	Ile	Ala	Arg	Gly 155	Ala	Ala	Phe	His	Ile 160
Phe	Gln	Val	Ile	Asp 165	Lys	Lys	Pro	Ser	Ile 170	Asp	Asn	Phe	Ser	Thr 175	Ala
Gly	Tyr	Lys	Pro 180	Glu	Ser	Ile	Glu	Gly 185	Thr	Val	Glu	Phe	Lys 190	Asn	Val
Ser	Phe	Asn 195	Tyr	Pro	Ser	Arg	Pro 200	Ser	Ile	Lys	Ile	Leu 205	Lys	Gly	Leu
Asn	Leu 210	Arg	Ile	Lys	Ser	Gly 215	Glu	Thr	Val	Ala	Leu 220	Val	Gly	Leu	Asn
Gly 225	Ser	Gly	Lys	Ser	Thr 230	Val	Val	Gln	Leu	Leu 235	Gln	Arg	Leu	Tyr	Asp 240
Pro	Asp	Asp	Gly 245	Phe	Ile	Met	Val	Asp	Glu 250	Asn	Asp	Ile	Arg	Ala 255	Leu
Asn	Val	Arg	His 260	Tyr	Arg	Asp	His 265	Ile	Gly	Val	Val	Ser	Gln 270	Glu	Pro
Val	Leu	Phe 275	Gly	Thr	Thr	Ile	Ser 280	Asn	Asn	Ile	Lys	Tyr 285	Gly	Arg	Asp
Asp	Val 290	Thr	Asp	Glu	Glu	Met 295	Glu	Arg	Ala	Ala	Arg 300	Glu	Ala	Asn	Ala

Tyr Asp Phe Ile Met Glu Phe Pro Asn Lys Phe Asn Thr Leu Val Gly
 305 310 315 320
 Glu Lys Gly Ala Gln Met Ser Gly Gly Gln Lys Gln Arg Ile Ala Ile
 325 330 335
 Ala Arg Ala Leu Val Arg Asn Pro Lys Ile Leu Ile Leu Asp Glu Ala
 340 345 350
 Thr Ser Ala Leu Asp Ser Glu Ser Lys Ser Ala Val Gln Ala Ala Leu
 355 360 365
 Glu Lys Ala Ser Lys Gly Arg Thr Thr Ile Val Val Ala His Arg Leu
 370 375 380
 Ser Thr Ile Arg Ser Ala Asp Leu Ile Val Thr Leu Lys Asp Gly Met
 385 390 395 400
 Leu Ala Glu Lys Gly Ala His Ala Glu Leu Met Ala Lys Arg Gly Leu
 405 410 415
 Tyr Tyr Ser Leu Val Met Ser Gln Asp Ile Lys Lys Ala Asp Glu Gln
 420 425 430
 Met Glu Ser Met Thr Tyr Ser Thr Glu Arg Lys Thr Asn Ser Leu Pro
 435 440 445
 Leu His Ser Val Lys Ser Ile Lys Ser Asp Phe Ile Asp Lys Ala Glu
 450 455 460
 Glu Ser Thr Gln Ser Lys Glu Ile Ser Leu Pro Glu Val Ser Leu Leu
 465 470 475 480
 Lys Ile Leu Lys Leu Asn Lys Pro Glu Trp Pro Phe Val Val Leu Gly
 485 490 495
 Thr Leu Ala Ser Val Leu Asn Gly Thr Val His Pro Val Phe Ser Ile
 500 505 510
 Ile Phe Ala Lys Ile Ile Thr Met Phe Gly Asn Asn Asp Lys Thr Thr
 515 520 525
 Leu Lys His Asp Ala Glu Ile Tyr Ser Met Ile Phe Val Ile Leu Gly
 530 535 540
 Val Ile Cys Phe Val Ser Tyr Phe Met Gln Gly Leu Phe Tyr Gly Arg
 545 550 555 560
 Ala Gly Glu Ile Leu Thr Met Arg Leu Arg His Leu Ala Phe Lys Ala
 565 570 575
 Met Leu Tyr Gln Asp Ile Ala Trp Phe Asp Glu Lys Glu Asn Ser Thr
 580 585 590
 Gly Gly Leu Thr Thr Ile Leu Ala Ile Asp Ile Ala Gln Ile Gln Gly
 595 600 605
 Ala Thr Gly Ser Arg Ile Gly Val Leu Thr Gln Asn Ala Thr Asn Met
 610 615 620
 Gly Leu Ser Val Ile Ile Ser Phe Ile Tyr Gly Trp Glu Met Thr Phe
 625 630 635 640

Leu	Ile	Leu	Ser	Ile	Ala	Pro	Val	Leu	Ala	Val	Thr	Gly	Met	Ile	Glu	
				645					650					655		
Thr	Ala	Ala	Met	Thr	Gly	Phe	Ala	Asn	Lys	Asp	Lys	Gln	Glu	Leu	Lys	
				660					665					670		
His	Ala	Gly	Lys	Ile	Ala	Thr	Glu	Ala	Leu	Glu	Asn	Ile	Arg	Thr	Ile	
				675					680					685		
Val	Ser	Leu	Thr	Arg	Glu	Lys	Ala	Phe	Glu	Gln	Met	Tyr	Glu	Glu	Met	
				690					695					700		
Leu	Gln	Thr	Gln	His	Arg	Asn	Thr	Ser	Lys	Lys	Ala	Gln	Ile	Ile	Gly	
705					710					715					720	
Ser	Cys	Tyr	Ala	Phe	Ser	His	Ala	Phe	Ile	Tyr	Phe	Ala	Tyr	Ala	Ala	
				725					730					735		
Gly	Phe	Arg	Phe	Gly	Ala	Tyr	Leu	Ile	Gln	Ala	Gly	Arg	Met	Thr	Pro	
				740					745					750		
Glu	Gly	Met	Phe	Ile	Val	Phe	Thr	Ala	Ile	Ala	Tyr	Gly	Ala	Met	Ala	
				755					760					765		
Ile	Gly	Lys	Thr	Leu	Val	Leu	Ala	Pro	Glu	Tyr	Ser	Lys	Ala	Lys	Ser	
				770					775					780		
Gly	Ala	Ala	His	Leu	Phe	Ala	Leu	Leu	Glu	Lys	Lys	Pro	Asn	Ile	Asp	
785					790					795					800	
Ser	Arg	Ser	Gln	Glu	Gly	Lys	Lys	Pro	Asp	Thr	Cys	Glu	Gly	Asn	Leu	
				805					810					815		
Glu	Phe	Arg	Glu	Val	Ser	Phe	Phe	Tyr	Pro	Cys	Arg	Pro	Asp	Val	Phe	
				820					825					830		
Ile	Leu	Arg	Gly	Leu	Ser	Leu	Ser	Ile	Glu	Arg	Gly	Lys	Thr	Val	Ala	
				835					840					845		
Phe	Val	Gly	Ser	Ser	Gly	Cys	Gly	Lys	Ser	Thr	Ser	Val	Gln	Leu	Leu	
				850					855					860		
Gln	Arg	Leu	Tyr	Asp	Pro	Val	Gln	Gly	Gln	Val	Leu	Phe	Asp	Gly	Val	
865					870					875					880	
Asp	Ala	Lys	Glu	Leu	Asn	Val	Gln	Trp	Leu	Arg	Ser	Gln	Ile	Ala	Ile	
				885					890					895		
Val	Pro	Gln	Glu	Pro	Val	Leu	Phe	Asn	Cys	Ser	Ile	Ala	Glu	Asn	Ile	
				900					905					910		
Ala	Tyr	Gly	Asp	Asn	Ser	Arg	Val	Val	Pro	Leu	Asp	Glu	Ile	Lys	Glu	
				915					920					925		
Ala	Ala	Asn	Ala	Ala	Asn	Ile	His	Ser	Phe	Ile	Glu	Gly	Leu	Pro	Glu	
				930					935					940		
Lys	Tyr	Asn	Thr	Gln	Val	Gly	Leu	Lys	Gly	Ala	Gln	Leu	Ser	Gly	Gly	
945					950					955					960	
Gln	Lys	Gln	Arg	Leu	Ala	Ile	Ala	Arg	Ala	Leu	Leu	Gln	Lys	Pro	Lys	
				965					970					975		

Ile Leu Leu Leu Asp Glu Ala Thr Ser Ala Leu Asp Asn Asp Ser Glu
 980 985 990

Lys Val Val Gln His Ala Leu Asp Lys Ala Arg Thr Gly Arg Thr Cys
 995 1000 1005

Leu Val Val Thr His Arg Leu Ser Ala Ile Gln Asn Ala Asp Leu
 1010 1015 1020

Ile Val Val Leu His Asn Gly Lys Ile Lys Glu Gln Gly Thr His
 1025 1030 1035

Gln Glu Leu Leu Arg Asn Arg Asp Ile Tyr Phe Lys Leu Val Asn
 1040 1045 1050

Ala Gln Ser Val Gln
 1055

<210> 5

<211> 1222

<212> PRT

<213> Homo sapiens

<220>

<221> Note

<222> (230)..(230)

<223> Xaa at position 230 represents any L amino acid

<400> 5

Met Ile Leu Gly Ile Leu Ala Ser Leu Val Asn Gly Ala Cys Leu Pro
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Leu Met Pro Leu Val Leu Gly Glu Met Ser Asp Asn Leu Ile Ser Gly
 20 25 30

Cys Leu Val Gln Thr Asn Thr Tyr Ser Phe Phe Arg Leu Thr Leu Tyr
 35 40 45

Tyr Val Gly Ile Gly Val Ala Ala Leu Ile Phe Gly Tyr Ile Gln Ile
 50 55 60

Ser Leu Trp Ile Ile Thr Ala Ala Arg Gln Thr Lys Arg Ile Arg Lys
 65 70 75 80

Gln Phe Phe His Ser Val Leu Ala Gln Asp Ile Gly Trp Phe Asp Ser
 85 90 95

Cys Asp Ile Gly Glu Leu Asn Thr Arg Met Thr Asp Ile Asp Lys Ile
 100 105 110

Ser Asp Gly Ile Gly Asp Lys Ile Ala Leu Leu Phe Gln Asn Met Ser
 115 120 125

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Thr Phe Ser Ile Gly Leu Ala Val Gly Leu Val Lys Gly Trp Lys Leu
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 Thr Leu Val Thr Leu Ser Thr Ser Pro Leu Ile Met Ala Ser Ala Ala
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 Ala Cys Ser Arg Met Val Ile Ser Leu Thr Ser Lys Glu Leu Ser Ala
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 Tyr Ser Lys Ala Gly Ala Val Ala Glu Glu Val Leu Ser Ser Ile Arg
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 Thr Val Ile Ala Phe Arg Ala Gln Glu Lys Glu Leu Gln Arg Ser Phe
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 Leu Leu Asn Ile Thr Arg Tyr Ala Trp Phe Tyr Phe Pro Gln Trp Leu
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 Leu Ser Cys Val Leu Xaa Phe Val Arg Tyr Thr Gln Asn Leu Lys Asp
 225 230 235 240
 Ala Lys Asp Phe Gly Ile Lys Arg Thr Ile Ala Ser Lys Val Ser Leu
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 Gly Ala Val Tyr Phe Phe Met Asn Gly Thr Tyr Gly Leu Ala Phe Trp
 260 265 270
 Tyr Gly Thr Ser Leu Ile Leu Asn Gly Glu Pro Gly Tyr Thr Ile Gly
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 Thr Val Leu Ala Val Phe Phe Ser Val Ile His Ser Ser Tyr Cys Ile
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 Gly Ala Ala Val Pro His Phe Glu Thr Phe Ala Ile Ala Arg Gly Ala
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 Tyr Gly Arg Asp Asp Val Thr Asp Glu Glu Met Glu Arg Ala Ala Arg
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Glu Ala Asn Ala Tyr Asp Phe Ile Met Glu Phe Pro Asn Lys Phe Asn
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 Lys Arg Gly Leu Tyr Tyr Ser Leu Val Met Ser Gln Asp Ile Lys Lys
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 Ala Asp Glu Gln Met Glu Ser Met Thr Tyr Ser Thr Glu Arg Lys Thr
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 Asp Lys Ala Glu Glu Ser Thr Gln Ser Lys Glu Ile Ser Leu Pro Glu
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 Val Ser Leu Leu Lys Ile Leu Lys Leu Asn Lys Pro Glu Trp Pro Phe
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 Val Val Leu Gly Thr Leu Ala Ser Val Leu Asn Gly Thr Val His Pro
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 Asp Lys Thr Thr Leu Lys His Asp Ala Glu Ile Tyr Ser Met Ile Phe
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 Ile Arg Thr Ile Val Ser Leu Thr Arg Glu Lys Ala Phe Glu Gln Met
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 Tyr Glu Glu Met Leu Gln Thr Gln His Arg Asn Thr Ser Lys Lys Ala
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Leu Ala Ile Ala Arg Ala Leu Leu Gln Lys Pro Lys Ile Leu Leu
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 Val Val Leu His Asn Gly Lys Ile Lys Glu Gln Gly Thr His Gln
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<400> 6

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 Cys Leu Val Gln Thr Asn Thr Tyr Ser Phe Phe Arg Leu Thr Leu Tyr
 35 40 45
 Tyr Val Gly Ile Gly Val Ala Ala Leu Ile Phe Gly Tyr Ile Gln Ile
 50 55 60
 Ser Leu Trp Ile Ile Thr Ala Ala Arg Gln Thr Lys Arg Ile Arg Lys
 65 70 75 80
 Gln Phe Phe His Ser Val Leu Ala Gln Asp Ile Gly Trp Phe Asp Ser
 85 90 95
 Cys Asp Ile Gly Glu Leu Asn Thr Arg Met Thr Asp Ile Asp Lys Ile
 100 105 110
 Ser Asp Gly Ile Gly Asp Lys Ile Ala Leu Leu Phe Gln Asn Met Ser
 115 120 125
 Thr Phe Ser Ile Gly Leu Ala Val Gly Leu Val Lys Gly Trp Lys Leu
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 Thr Leu Val Thr Leu Ser Thr Ser Pro Leu Ile Met Ala Ser Ala Ala
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"GOTHE"

Ala Cys Ser Arg Met Val Ile Ser Leu Thr Ser Lys Glu Leu Ser Ala
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 Tyr Ser Lys Ala Gly Ala Val Ala Glu Glu Val Leu Ser Ser Ile Arg
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 Thr Val Ile Ala Phe Arg Ala Gln Glu Lys Glu Leu Gln Arg Tyr Thr
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 Gln Asn Leu Lys Asp Ala Lys Asp Phe Gly Ile Lys Arg Thr Ile Ala
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 Ser Lys Val Ser Leu Gly Ala Val Tyr Phe Phe Met Asn Gly Thr Tyr
 225 230 235 240
 Gly Leu Ala Phe Trp Tyr Gly Thr Ser Leu Ile Leu Asn Gly Glu Pro
 245 250 255
 Gly Tyr Thr Ile Gly Thr Val Leu Ala Val Phe Phe Ser Val Ile His
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 Ser Ser Tyr Cys Ile Gly Ala Ala Val Pro His Phe Glu Thr Phe Ala
 275 280 285
 Ile Ala Arg Gly Ala Ala Phe His Ile Phe Gln Val Ile Asp Lys Lys
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 Pro Ser Ile Asp Asn Phe Ser Thr Ala Gly Tyr Lys Pro Glu Ser Ile
 305 310 315 320
 Glu Gly Thr Val Glu Phe Lys Asn Val Ser Phe Asn Tyr Pro Ser Arg
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 Pro Ser Ile Lys Ile Leu Lys Gly Leu Asn Leu Arg Ile Lys Ser Gly
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 Glu Thr Val Ala Leu Val Gly Leu Asn Gly Ser Gly Lys Ser Thr Val
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 Val Gln Leu Leu Gln Arg Leu Tyr Asp Pro Asp Asp Gly Phe Ile Met
 370 375 380
 Val Asp Glu Asn Asp Ile Arg Ala Leu Asn Val Arg His Tyr Arg Asp
 385 390 395 400
 His Ile Gly Val Val Ser Gln Glu Pro Val Leu Phe Gly Thr Thr Ile
 405 410 415
 Ser Asn Asn Ile Lys Tyr Gly Arg Asp Asp Val Thr Asp Glu Glu Met
 420 425 430
 Glu Arg Ala Ala Arg Glu Ala Asn Ala Tyr Asp Phe Ile Met Glu Phe
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 Pro Asn Lys Phe Asn Thr Leu Val Gly Glu Lys Gly Ala Gln Met Ser
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 Pro Lys Ile Leu Ile Leu Asp Glu Ala Thr Ser Ala Leu Asp Ser Glu
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Ser Lys Ser Ala Val Gln Ala Ala Leu Glu Lys Ala Ser Lys Gly Arg
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 Thr Thr Ile Val Val Ala His Arg Leu Ser Thr Ile Arg Ser Ala Asp
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 Thr Glu Arg Lys Thr Asn Ser Leu Pro Leu His Ser Val Lys Ser Ile
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 Lys Ser Asp Phe Ile Asp Lys Ala Glu Glu Ser Thr Gln Ser Lys Glu
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 Ile Ser Leu Pro Glu Val Ser Leu Leu Lys Ile Leu Lys Leu Asn Lys
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 Pro Glu Trp Pro Phe Val Val Leu Gly Thr Leu Ala Ser Val Leu Asn
 625 630 635 640
 Gly Thr Val His Pro Val Phe Ser Ile Ile Phe Ala Lys Ile Ile Thr
 645 650 655
 Met Phe Gly Asn Asn Asp Lys Thr Thr Leu Lys His Asp Ala Glu Ile
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 Tyr Ser Met Ile Phe Val Ile Leu Gly Val Ile Cys Phe Val Ser Tyr
 675 680 685
 Phe Met Gln Gly Leu Phe Tyr Gly Arg Ala Gly Glu Ile Leu Thr Met
 690 695 700
 Arg Leu Arg His Leu Ala Phe Lys Ala Met Leu Tyr Gln Asp Ile Ala
 705 710 715 720
 Trp Phe Asp Glu Lys Glu Asn Ser Thr Gly Gly Leu Thr Thr Ile Leu
 725 730 735
 Ala Ile Asp Ile Ala Gln Ile Gln Gly Ala Thr Gly Ser Arg Ile Gly
 740 745 750
 Val Leu Thr Gln Asn Ala Thr Asn Met Gly Leu Ser Val Ile Ile Ser
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 Phe Ile Tyr Gly Trp Glu Met Thr Phe Leu Ile Leu Ser Ile Ala Pro
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 Val Leu Ala Val Thr Gly Met Ile Glu Thr Ala Ala Met Thr Gly Phe
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 Ala Asn Lys Asp Lys Gln Glu Leu Lys His Ala Gly Lys Ile Ala Thr
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 820 825 830

Ala Phe Glu Gln Met Tyr Glu Glu Met Leu Gln Thr Gln His Arg Asn
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 Thr Ser Lys Lys Ala Gln Ile Ile Gly Ser Cys Tyr Ala Phe Ser His
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 865 870 875 880
 Leu Ile Gln Ala Gly Arg Met Thr Pro Glu Gly Met Phe Ile Val Phe
 885 890 895
 Thr Ala Ile Ala Tyr Gly Ala Met Ala Ile Gly Lys Thr Leu Val Leu
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 Ala Pro Glu Tyr Ser Lys Ala Lys Ser Gly Ala Ala His Leu Phe Ala
 915 920 925
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 930 935 940
 Lys Pro Asp Thr Cys Glu Gly Asn Leu Glu Phe Arg Glu Val Ser Phe
 945 950 955 960
 Phe Tyr Pro Cys Arg Pro Asp Val Phe Ile Leu Arg Gly Leu Ser Leu
 965 970 975
 Ser Ile Glu Arg Gly Lys Thr Val Ala Phe Val Gly Ser Ser Gly Cys
 980 985 990
 Gly Lys Ser Thr Ser Val Gln Leu Leu Gln Arg Leu Tyr Asp Pro Val
 995 1000 1005
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 Val Gln Trp Leu Arg Ser Gln Ile Ala Ile Val Pro Gln Glu Pro
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<211> 541

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<213> Homo sapiens

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<222> (230)..(230)

<223> Xaa at position 230 represents any L amino acid

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 Ser Leu Trp Ile Ile Thr Ala Ala Arg Gln Thr Lys Arg Ile Arg Lys
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 Gln Phe Phe His Ser Val Leu Ala Gln Asp Ile Gly Trp Phe Asp Ser
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 Cys Asp Ile Gly Glu Leu Asn Thr Arg Met Thr Asp Ile Asp Lys Ile
 100 105 110
 Ser Asp Gly Ile Gly Asp Lys Ile Ala Leu Leu Phe Gln Asn Met Ser
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 Thr Phe Ser Ile Gly Leu Ala Val Gly Leu Val Lys Gly Trp Lys Leu
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 Thr Leu Val Thr Leu Ser Thr Ser Pro Leu Ile Met Ala Ser Ala Ala
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 Ala Cys Ser Arg Met Val Ile Ser Leu Thr Ser Lys Glu Leu Ser Ala
 165 170 175

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Tyr	Ser	Lys	Ala 180	Gly	Ala	Val	Ala	Glu 185	Glu	Val	Leu	Ser	Ser 190	Ile	Arg
Thr	Val	Ile 195	Ala	Phe	Arg	Ala	Gln 200	Glu	Lys	Glu	Leu	Gln 205	Arg	Ser	Phe
Leu	Leu 210	Asn	Ile	Thr	Arg	Tyr 215	Ala	Trp	Phe	Tyr	Phe 220	Pro	Gln	Trp	Leu
Leu 225	Ser	Cys	Val	Leu	Xaa 230	Phe	Val	Arg	Tyr	Thr 235	Gln	Asn	Leu	Lys	Asp 240
Ala	Lys	Asp	Phe	Gly 245	Ile	Lys	Arg	Thr	Ile 250	Ala	Ser	Lys	Val	Ser 255	Leu
Gly	Ala	Val	Tyr 260	Phe	Phe	Met	Asn	Gly 265	Thr	Tyr	Gly	Leu	Ala 270	Phe	Trp
Tyr	Gly	Thr 275	Ser	Leu	Ile	Leu	Asn 280	Gly	Glu	Pro	Gly	Tyr 285	Thr	Ile	Gly
Thr	Val 290	Leu	Ala	Val	Phe	Phe 295	Ser	Val	Ile	His	Ser 300	Ser	Tyr	Cys	Ile
Gly 305	Ala	Ala	Val	Pro	His 310	Phe	Glu	Thr	Phe	Ala 315	Ile	Ala	Arg	Gly	Ala 320
Ala	Phe	His	Ile	Phe 325	Gln	Val	Ile	Asp	Lys 330	Lys	Pro	Ser	Ile	Asp 335	Asn
Phe	Ser	Thr	Ala 340	Gly	Tyr	Lys	Pro	Glu 345	Ser	Ile	Glu	Gly	Thr 350	Val	Glu
Phe	Lys	Asn 355	Val	Ser	Phe	Asn	Tyr 360	Pro	Ser	Arg	Pro	Ser 365	Ile	Lys	Ile
Leu	Lys 370	Gly	Leu	Asn	Leu	Arg 375	Ile	Lys	Ser	Gly	Glu 380	Thr	Val	Ala	Leu
Val 385	Gly	Leu	Asn	Gly	Ser 390	Gly	Lys	Ser	Thr	Val 395	Val	Gln	Leu	Leu	Gln 400
Arg	Leu	Tyr	Asp	Pro 405	Asp	Asp	Gly	Phe	Ile 410	Met	Val	Asp	Glu	Asn 415	Asp
Ile	Arg	Ala	Leu 420	Asn	Val	Arg	His	Tyr 425	Arg	Asp	His	Ile	Gly 430	Val	Val
Ser	Gln	Glu 435	Pro	Val	Leu	Phe	Gly 440	Thr	Thr	Ile	Ser	Asn 445	Asn	Ile	Lys
Tyr	Gly 450	Arg	Asp	Asp	Val	Thr 455	Asp	Glu	Glu	Met	Glu 460	Arg	Ala	Ala	Arg
Glu 465	Ala	Asn	Ala	Tyr	Asp 470	Phe	Ile	Met	Glu	Phe 475	Pro	Asn	Lys	Phe	Asn 480
Thr	Leu	Val	Gly	Glu 485	Lys	Gly	Ala	Gln	Met 490	Ser	Gly	Gly	Gln	Lys 495	Gln
Arg	Ile	Ala	Ile 500	Ala	Arg	Ala	Leu	Val 505	Arg	Asn	Pro	Lys	Ile 510	Leu	Ile

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Gln Ala Ala Leu Glu Lys Asp Thr Pro Arg Tyr Ser Phe
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<211> 514

<212> PRT

<213> Homo sapiens

<400> 8

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Cys Leu Val Gln Thr Asn Thr Tyr Ser Phe Phe Arg Leu Thr Leu Tyr
 35 40 45

Tyr Val Gly Ile Gly Val Ala Ala Leu Ile Phe Gly Tyr Ile Gln Ile
 50 55 60

Ser Leu Trp Ile Ile Thr Ala Ala Arg Gln Thr Lys Arg Ile Arg Lys
 65 70 75 80

Gln Phe Phe His Ser Val Leu Ala Gln Asp Ile Gly Trp Phe Asp Ser
 85 90 95

Cys Asp Ile Gly Glu Leu Asn Thr Arg Met Thr Asp Ile Asp Lys Ile
 100 105 110

Ser Asp Gly Ile Gly Asp Lys Ile Ala Leu Leu Phe Gln Asn Met Ser
 115 120 125

Thr Phe Ser Ile Gly Leu Ala Val Gly Leu Val Lys Gly Trp Lys Leu
 130 135 140

Thr Leu Val Thr Leu Ser Thr Ser Pro Leu Ile Met Ala Ser Ala Ala
 145 150 155 160

Ala Cys Ser Arg Met Val Ile Ser Leu Thr Ser Lys Glu Leu Ser Ala
 165 170 175

Tyr Ser Lys Ala Gly Ala Val Ala Glu Glu Val Leu Ser Ser Ile Arg
 180 185 190

Thr Val Ile Ala Phe Arg Ala Gln Glu Lys Glu Leu Gln Arg Tyr Thr
 195 200 205

Gln Asn Leu Lys Asp Ala Lys Asp Phe Gly Ile Lys Arg Thr Ile Ala
 210 215 220

Ser Lys Val Ser Leu Gly Ala Val Tyr Phe Phe Met Asn Gly Thr Tyr
 225 230 235 240

114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000

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 Gly Tyr Thr Ile Gly Thr Val Leu Ala Val Phe Phe Ser Val Ile His
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 Ser Ser Tyr Cys Ile Gly Ala Ala Val Pro His Phe Glu Thr Phe Ala
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 Glu Gly Thr Val Glu Phe Lys Asn Val Ser Phe Asn Tyr Pro Ser Arg
 325 330 335
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 Glu Thr Val Ala Leu Val Gly Leu Asn Gly Ser Gly Lys Ser Thr Val
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 Val Gln Leu Leu Gln Arg Leu Tyr Asp Pro Asp Asp Gly Phe Ile Met
 370 375 380
 Val Asp Glu Asn Asp Ile Arg Ala Leu Asn Val Arg His Tyr Arg Asp
 385 390 395 400
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 405 410 415
 Ser Asn Asn Ile Lys Tyr Gly Arg Asp Asp Val Thr Asp Glu Glu Met
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 Glu Arg Ala Ala Arg Glu Ala Asn Ala Tyr Asp Phe Ile Met Glu Phe
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<212> DNA

<213> Homo sapiens

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<211> 2856

<212> DNA

<213> Homo sapiens

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<211> 1175

<212> DNA

<213> Homo sapiens


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<213> Homo sapiens

<220>

<221> Note

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<223> n at position 198 represents any nucleotide (A, T, C or G)

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<211> 3702

<212> DNA

<213> Homo sapiens

<220>

<221> Note

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<223> n at position 723 represents any nucleotide (A, T, C or G)

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<211> 3621

<212> DNA

<213> Homo sapiens

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